

ABSTRACT

Great Lakes Commission Geographic Information System Mapping and Marine Pollution Prevention

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Geographic Information Systems

The Great Lakes Commission (GLC) has dedicated a section of individuals to production of geographic information system (GIS) mapping. The primary goal of the section is to collect, correct, and disseminate GIS data for the eight Great Lakes States at a scale of 1:24,000 or better. Currently, most large area/small scale mapping is performed at a scale of 1:100,000, 1:250,000, or greater. These large area maps lack specific detail to adequately catalogue stream flows, monitoring/sampling sites, boundary delineations, and other critical locational information aspects with inherent errors of 164 feet or greater.

The GLC's initial impetus for the basin-wide detailed data collection stems from assisting U.S. EPA with implementation of the statutory and regulatory requirements of the Oil Pollution Act of 1990 (OPA). OPA mandated that U.S. EPA collect, catalogue, and distribute information on environmentally and economically sensitive areas in the Inland Zone. To this end, the GLC has been working since 1992 in a cooperative partnership with U.S. EPA Region 5, the Upper Mississippi River Basin Association (UMRBA), and the U.S. Geological Survey's (USGS's) Upper Midwest Environmental Sciences Center (UMESC) to produce the data and maps in accordance with OPA and based upon a scale of 1:24,000 (accurate to 40 feet). This partnership is known as the Inland Area Planning Committee (IAPC) Working Group. The following data layers are being collected and include the broad categories of Sensitive Species; Managed Natural Resource Areas; Economically Sensitive Resources; Potential Spill Sources; and Response Consideration:

- Threatened and Endangered Species
- Managed Lands (*i.e.*, federal, state, local, and private parks, preserves, recreation areas)
- Special Designation Areas (*i.e.*, wild and scenic river, trout streams)
- Federally Recognized Tribal Lands
- Potable and Non-potable Surface Water Intakes
- Marinas
- Navigational Locks and Dams
- Fixed Oil Storage Facilities

- Marine Transfer Facilities
- Oil and Oil Product Pipelines
- Boat Access Sites
- Non-navigational Dams

These data, throughout the collection and mapping process, undergo a direct owner/operator survey, internal reviews, and external reviews. When each area of collection has gone “final” the GIS products are distributed three ways: a limited number of hard copies (due to cost considerations), on CD-ROM, and via the Internet at: <http://www.epa.gov/region5/oil/>. In addition to the multi-media approach to distribution, the final products are also made available as ArcView®, ArcInfo® Export, and portable document files (.pdf) to reach as wide an audience of responders and planners as possible. Soon, files will also be directly importable to the CAMEO/ALOHA/MARPLOT family of software.

Attachment 1 represents the GLC’s GIS efforts to date in U.S. EPA Region 5. Attachment 2 represents data presentation at a scale of 1:100,000. Attachment 3 represents data presentation at a scale of 1:25,000. Attachment 4 represents oil and oil product pipeline data presented at a scale of 1:12,500. Attachment 5 represents a georeferenced aerial photo layer of the Detroit River.

Marine Pollution Prevention

The IAPC Working Group considers the GIS products to be base maps for the individual and organizational user. Data can be augmented and/or extracted to suit the particular needs. With this, the Northwest Ohio Pollution Prevention Team (P2 Team) approached the GLC to assist in the production of a recreational boater’s guide aimed at the waste generation, recycling, and reduction aspects of the marine industry. This guide will be used as a pilot project for the Great Lakes and is based upon the Santa Monica Bay Restoration Project’s (SMBRP’s) *Southern California Boater’s Guide*.

While it is anticipated that generalized shoreline sensitivity data, based upon the National Oceanic and Atmospheric Administration’s (NOAA’s) work, will be incorporated into the *Guide* at 1:24,000, specific harbor maps will also be generated at approximately the 1:2,000 scale. These harbor maps will be augmented by aerial photos to help the boater depict and delineate actual anchorages. In addition, the *Guide* will present detailed information on each of the 150 marinas in the Western Basin of Lake Erie including pump-out and dump stations, recycling facilities, and amenities. Tourist information, Western Basin facts, boating safety, marine communications, and navigational information will also be included.

Attachments 6 through 10 are extracted pages from the *Southern California Boater’s Guide* and include an overview of the contents and a sample harbor description of Santa Barbara Harbor.